NORTHWEST
NAZARENE UNIVERSITY

CONCURRENT CREDIT SYLLABUS

1. **Course Number and Title**: Math 2510 Calculus 1
2. **Course Description**: Limits, derivatives (including logarithmic, exponential, trig and inverse trig functions), applications of the derivative, and integration.
3. **Credit Hours**: 4
4. **Course Prerequisites**: Completion of Math 3 at MTCHS
5. **Course Dates**: 8/13/2025- 5/1/2026
6. **Course Times**: 11:40-12:29 M-F
7. **Course Location:** MTCHS Room 109
8. **Instructor**: Brant Smith brant.smith@mtchs.org
9. **Required Text and Other Learning Resources**:

Thomas' Calculus Early Transcendentals 13th Edition (Provided by MTCHS)
Calculator with graphing capabilities (provided by MTCHS on request)

10. **Course Overview**:

Calculus 1 is an introductory course for the fundamentals of single variable calculus. The course begins with an overview of precalculus concepts including functions, limits, and continuity before launching into an in depth exploration of basic differentiation. Students will learn common differentiation techniques and their applications to optimization and related rates. Key relationships between the behavior of parent functions and their derivatives will be covered before moving into summations and integration. Basic techniques single variable integration of definite and indefinite integrals will lay the groundwork for concluding the course with solids of revolution.

11. **Course Objectives**: Upon completion of this course, students should be able to:
    - Evaluate the continuity of functions
    - Take derivatives of polynomial, rational, exponential, and trigonometric functions
    - Integrate with respect to a single variable
    - Use integration and derivation to solve application problems
    - Understand the relationship between functions, their derivatives, and their integrals
12. **Course Calendar/Schedule (may state as tentative):**

Week 1-4: Functions, Trig Verifications, and Inverses (Quiz weeks 2 and 4)
Week 5: Function Modelling Project, Unit 1 Exam

Week 6-9: Limits and Continuity (Quiz weeks 8 and 9)
Week 10: Unit 2 Exam, Limit definition of the derivative
Week 11: Sum, Product, and Quotient Rule (Quiz)
Week 12: Power and Chain Rule (Quiz)
Week 13: Trigonometric and logarithmic derivatives (Quiz)
Week 14-15: Implicit derivatives, related rates, and linearization (Quiz week 15)
Week 16: Derivatives project, Unit 3 Exam
Week 17: Semester 1 Review and Final
Week 18: Extreme Value Theorem and Mean Value Theorem (Quiz)
Week 19: First and second derivative tests
Week 20: Curve sketching (Quiz)
Week 21: L'Hopital and Optimization (Quiz)
Week 22: Optimization Project and Unit 4 Exam
Week 23-24: Summations and Approximations (Quiz week 24)
Week 25-26: Definite Integrals and Fundamental Theorem of Calculus (Quiz week 25)
Week 27-28:U-substitution and Indefinite Integrals
Week 29: Unit 5 Exam, Area between curves
Week 30: Disk and washer method (Quiz)
Week 31: Review and Semester 2 Final

13. **Grading Policy and Rubric:**

Grade will be divided into the following categories over the course of each semester:

- Daily Work (Homework and Classwork) 40%
- Quizzes + Projects 20%
- Unit Exams 30%
- Final Exams 10%

Final course grades for NNU credit will be based on cumulative grade across both semesters.

Grading Scale

A 90 to 100
B 80 to 89
C 70 to 79
NC 0 to 69

Homework

Students will complete daily homework assignments consisting of problems from the textbook. Homeworks may be handwritten or typed in a professional manner, however a physical assignment must be submitted at the start of class to be graded. Homework assignments will be graded based on completion/ attempts of all problems and sufficient work to demonstrate problem solving skills being shown. Students may receive completion credit by attempting all problems, or by providing a written explanation of what specific concepts they are struggling with on *each incomplete problem*. Students may use calculators, and utilize all provided resources (textbook, notes, supplemental resources, ect.) to complete their assignments. Collaboration with other students and the usage of external resources is permitted, however students must complete their own work, and be able to explain all solutions to teachers upon request.

Quizzes

Students will take quizzes every 2-4 textbook sections. Unless otherwise specified, the use of calculators is permitted on all quizzes. Students will also be allowed to reference any notes that they have created, physical homework assignments, and handouts provided by the teacher. Collaboration and the use of resources, other than those listed above, is prohibited unless explicitly specified. Corrections will not be available for quizzes.

Unit Exams

At the conclusion of each unit, students will take a comprehensive exam of all concepts covered in that unit. Students will be allowed the usage of a calculator and be permitted to bring a single page, of standard printer or notebook paper, note sheet of their own creation. Unit exam corrections will be allowed, and are explained below, however only the original grade will count for NNU credit.

Finals

At the end of each semester, students will take a comprehensive exam covering the entire semester. The two final exams will be averaged at the end of the year.

Late Work

Students may receive no more than 70% for any late assignment. Any missing or late assignment may be submitted up to two school days after the assignment is marked missing in PowerSchool. Exceptions to this policy may be requested by the student in writing or email. The instructor will make the final determination on extension requests and will inform the student of the decision in writing or email.

Workplace Skills

In order to prepare for the internship, students will be instructed and assessed on the MTCHS Framework skills. This is done throughout the course and woven into various activities. Junior/Senior year, students will focus primarily on Self Motivation and Decision Making skills.

14. **Course Policies**:

1. Attendance will be taken daily, but will not count toward the final grade.
2. Any material missed due to an absence is the responsibility of the student to make up.
3. Assessments/ assignments missed due to an absence will be given a 2 day extension per missing day to make up. After that a zero will be given.
4. Students must receive permission from the instructor to type notes, otherwise all notes must be handwritten.
5. All IEP and 504 accommodations valid at MTCHS will be recognized
6. *Corrections/ Retakes (Does not count for NNU credit)*
    a. If a student receives below a 70% on a **unit exam**, they may choose to complete either corrections or a retake. Corrections/ retakes must be completed within one week of the assessment being returned for students to receive credit. To complete corrections/ retakes, students must notify their teacher at least 24 hours in advance to find a time during school hours (before or after school, class, and lunch are all valid times) to complete their work in the presence of a MTCHS staff member. Students may start and stop work on corrections/ retakes during the day, however they must turn in all materials to a staff member while not actively working. Students will have until the end of the day (3:00 pm) to complete their chosen corrections, after which no additional work will be accepted. For corrections, students may receive **up to 50%** of their lost points back by providing (on a separate sheet of paper) a detailed explanation of why they got the incorrect answer and work leading to the correct answer. For corrections, students are allowed to use any resources available. For a retake, students may receive **at most a 70%** and are only allowed the resources permitted on the original exam. Only one retake is allowed per unit exam, with the retake grade replacing the original regardless of the score.
7. Cheating: All parties involved will receive a zero.

Students are required to generate original work on projects and assignments. Any other work not generated by the student (or project group) will be considered cheating, which includes but is not limited to:

• photocopying or scanning another student's work
• plagiarism of any kind
• downloading another student's work from the network or internet and turning it in as original work
• copying and pasting published information (websites, books, magazines, etc..) into student's document without MLA citations
• copying answers from another student
• reasonable suspicion by a teacher
• Students caught or suspected of cheating will be dealt with according to the Meridian Technical Charter High School Discipline Policy.